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ABSTRACT

The critical thinker is one who is, according to Harvey Siegel, "appropriately moved by reasons." This characterization of critical thinking combines a "reason assessment" component (the principled assessment of reasons and their ability to warrant beliefs, claims and actions) and a "critical attitude" component (the disposition to engage in principled reason assessment). However such critical thinking is least spontaneous when an individual confronts his or her most basic prejudices or deeply held convictions. In these situations, to paraphrase Siegel, the individual may possess the ability but not the disposition to assess certain of his or her beliefs or claims. CRITO (formed acronymically from the logical terms Conclusion, Reasons, Inference, Truth, and Objections) addresses both the principled reason assessment and critical attitude components of critical thinking by requiring students to assess critically the validity of their own inferences, the truth of reasons supplied in defense of conclusions, and finally the soundness of those inferences. Although the components of CRITO are described in the language of formal logic, the CRITO method requires only a general understanding of the nature of effective argumentation. (TB)

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CRITO:

Informal Logic, Critical Thinking, and the Argumentative Essay

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Abstract

Since our most basic prejudices and convictions can blind us to potentially less partial truths, critical thinking is often most difficult in just those situations where it seems most important. In this essay I introduce CRITO (formed acronymically from the logical terms Conclusion, Reasons, Inference, Truth, and Objections) as one method designed to help students think and write critically about any claim (or set of claims)--especially those claims students may prefer to avoid criticizing.

> It has always been my nature never to accept advice from any of my friends unless reflection shows that it is the best course that reason offers.
>
> ---Socrates, in *Crito*

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Introduction

Following Harvey Siegel, I define the critical thinker as one who is "appropriately moved by reasons" (Siegel, 1988). This

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characterization of critical thinking combines a *reason assessment* component (the principled assessment of reasons and their ability to warrant beliefs, claims, and actions; i.e., the domain of arguments) and a *critical attitude* component (the disposition to engage in principled reason assessment). It follows that the (fully) critical thinker is both *able* and *disposed* to engage in principled reason assessment:

> Such a person habitually seeks evidence and reasons, and is predisposed so to seek--and to base belief and action on the results of such seeking. She applies the skills and abilities of reason assessment in all appropriate contexts, *including those contexts in which her own beliefs and actions are challenged* (Ibin, p.39, emphasis mine).

As the final line of this passage suggests, the critical temper is least spontaneous as we confront our most basic prejudices or deeply held convictions. In these situations, to paraphrase Siegel, we may possess the ability, but not the disposition, to assess critically certain of our beliefs or claims.

The CRITO Method

CRITO (formed acronymically from the logical terms Conclusion, Reasons, Inference, Truth, and Objections) addresses both the principled reason assessment and critical attitude components of critical thinking, by requiring students to assess critically (carefully, impartially, consistently) the validity (or strength) of their own inferences, the truth of reasons supplied in defense of conclusions, and, finally, the soundness (or cogency) of those

inferences. I claim no originality for the individual elements of CRITO, which simply mirror (in C, R, I, and T) the essential components of any cogent or sound inference and, not surprisingly, provide an effective outline for an argumentative or evaluative essay (For examples, see below). Though I have chosen to describe its components in the language of formal logic, CRITO requires only a general understanding of the nature of effective argumentation.

C: First, we must clearly identify the claim or conclusion (C) we hope to defend. (C) ought to be straightforward, singular, substantive (non tautological and the object of possible or actual debate), ostensibly defensible, and of genuine interest to the student.

R: Second, (C) requires for its defense a set of reasons (R), or premises. Logic requires that we supply at least one premise, though the number ought to be sufficient to convince the reader of the truth (accuracy, reasonableness, and so on) of (C).

I: Third, we test the inference (I) or logical connection between (R) and (C), to ensure that our reasons are sufficient to produce (C), either with some degree of probability (inductively) or with certainty (deductively). In less formal terms, this step tests the validity (or

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*For examples of this latter connection, see Hintikka, J and Bachman, J. (1991). *What If.....? Toward Excellence in Reasoning*. London: Mayfield Publishing, section 4.3; and Luckhardy, C. Grant and Bechtel, W. (1994). *How To Do Things With Logic*. Hillsdale, NJ: Lawrence Erlbaum, Chapter 4.

strength) of our argument, since we know that an argument can fail despite all of its parts being true, as we might try to defend a true conclusion with irrelevant premises. Failing the (I) test, we add to or qualify the existing reasons and conclusion to produce a new argument.

T: Fourth, we test the truth (T) of our reasons, since even a valid or strong argument (that is, a valid or strong argument that passes the (I) test) may contain any number of false parts. False premises must be replaced or refined. Only the best (deductively sound or inductively cogent) arguments will pass both the (I) and the (T) tests.

O: Fifth, we construct the strongest imaginable objection(s) to our argument, hoping to test further its ability to withstand critical scrutiny. This is, perhaps, the most difficult stage of CRITO, for it sanctions a potentially unsettling fallibilism; that is, it asks us to imagine that our objections(s), making any necessary revisions to the original argument.

Conclusion

I will close with three general comments on the method. First, despite its somewhat formulaic appearance, CRITO merely provides well-placed and potentially rewarding prompts for student activity and reflection. Like other critical thinking techniques, CRITO does not guarantee, but only promotes and directs, critical thought and behavior. It is no routine or easy task, however, to accept even partially CRITO's challenge to engage in principled reason assessment

or, especially, to construct and consider nontrivial objections to one's current beliefs.

Second, CRITO presents an opportunity to have these challenges to the students' considered judgments issue, not from the instructor, but from the students themselves, as they learn to apply general rules of good reasoning to their own beliefs an arguments. As an affective strategy, the impersonal, seemingly objective, nature of CRITO's demands may help to provide the emotional space in which students can accept and learn from nontrivial challenges to their most basic assumptions.

Finally, CRITO is compatible with most forms of collaborative or cooperative learning. Small group work, especially pairs, in which students alternate between presenting their work and listening to and commenting critically on another student's work, can facilitate each successive stage of principled reason (and objection) assessment.

This account of CRITO has benefited from many discussions with my colleague Matt Silliman, with Kathleen R. Johnson (who uses the method teaching Sociology at Keene Stat College in New Hampshire), and with many students, especially those in Philosophy 100:51, Summer, 1995. I presented a version of this paper at the 6th annual *Problem Solving Across the Curriculum* conference in Rochester, NY, (June 1995).